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March 27, 2006

Steve Delson
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RE: Coral tree at Radio Square, Santa Barbara

BACKGROUND

I was contacted by Edward DeVicente, architect for the Conceptual Motion Company, regarding a proposed project at Radio Square on the corner of De La Vina and Carrillo Streets. His company was designing a multiple story building adjacent to a coral tree and was interested in its preservation. Daniel Weber, the project manager, followed up the initial call and provided me with drawings of the site. I had informed both Edward and Daniel about my knowledge of this tree and I did not believe it was worth saving. However, they expressed their company's interest in going forth with my assessment of the design relative to preserving the tree. I went to the site on March 20, 2006 to collect my field notes.

ASSIGNMENT

I have been assigned to assess this coral tree and report on its condition and potential impacts to the tree from the proposed project, including recommendations for the tree's preservation.

LIMITS OF THE ASSIGNMENT

My observation of the root system is limited to the bulges and cracks in the asphalt and concrete.

USE OF THIS REPORT

I intend for this report to offer guidelines for preservation of the tree or support for its removal and replacement.

OBSERVATIONS

1. The coral tree is an *Erythrina caffra* and has three trunks with DSHs of 19", 13" and 28" (diameter at standard height measured at 54" above ground).
2. Based on the growth of the crown, it appears the tree is biologically healthy.
3. However, structurally, the tree is in poor condition.
4. This fast growing species is confined to a small triangular shaped planter in a parking lot that is approximately 8' by 17'. Exposed roots are evident and can be seen bulging at the curbs of the planter and girdling the western trunk. The eastern trunk of the tree is growing into the stucco wall, which will eventually conflict with the sidewalk. See figures.
5. A small diameter trunk on the north side of the tree was removed several years ago, and the wood at the base of the cut has decomposed leaving a cavity.
6. According to the architectural plan, the closest point of construction on the first floor is about 8' from the trunk. The below-ground floors will include a retaining wall about 14' from the trunk.

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DISCUSSION

This coral tree is attractive, but structurally poor due to its limited planting site. A healthy *Erythrina caffra* requires adequate space to grow. In most limited planting spaces, this species does major damage to surrounding infrastructure, as seen with this one. Maintenance workers are often required to extensively prune the crown and roots to compensate for lack of room, thus gradually destroying the tree.

Although this tree is biologically healthy, the conflicting trunks and roots are a sure indication of future structural problems. Figure #2 below, shows how the western trunk is being girdled by rapid growth of lateral roots. Figure #5 points to how the increasing diameter of trunk growth, squeezes each other for space, thus causing an anatomical weakness (called included bark) and a weak attachment between trunks.

The removed trunk on the north side of the tree shows decomposed wood (cavity) at the base of a pruning cut. Eventually, this decay moves into other parts of the porous wood and weakens the supporting heartwood. See figure #4.

The project will undoubtedly cause some damage to roots during demolition of the asphalt, concrete and stucco wall, even if the work is done carefully. The building will require pruning that alters the natural shape of a spreading tree to a narrow and vertical form.

CONCLUSION

This coral tree should be removed and replaced with a tree that can grow into the planting space, rather than be cut to fit the space.

If preservation is still desired, expect that growth, followed by pruning of the crown and cutting into its root system, will slowly contribute to its demise.

RECOMMENDATIONS

1. Remove the tree and replace it. If a coral tree is preferred, the *erytrhina coralloides* is an attractive but slower growing species (it is also deciduous). A conicial or upright shaped tree would be best for this planting site and should be installed with a chemical root barrier.

   If the tree must me preserved then:

2. Demolish all concrete, asphalt and stucco around the tree by hand.
3. Any encountered roots that are greater than 1/2" in diameter should be cut, by hand, back to at least 1' inside of the planting space.
4. Install a chemical root barrier (bio barrier) to a 36" depth.
5. Install chain link fence at the edge of the tree's allowed area.

Please contact me with any questions.

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Figure 1: A view of the coral tree looking to the southeast.

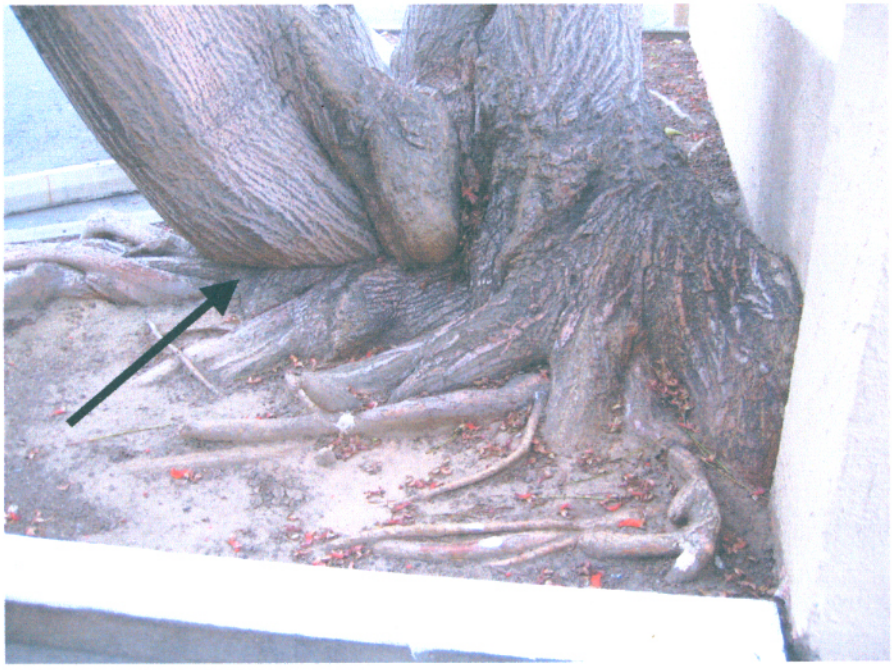

Figure 2: Looking to the north, the trunk is growing into the wall to the east. The arrow points to the western trunk being girdled by root growth.

Figure 3: Looking to the east, note the extensive root system and some of the damage to concrete and asphalt.

Figure 4: Looking south at a cavity from an old pruning cut where one trunk was removed. Note how the wood has decomposed.

Figure 5: Another view of the co-dominant trunks and the included bark between trunks, and girdling roots (arrows).